REMARKS

Claims 1-47 are pending, but claims 20, 21 and 25-47 have been withdrawn from consideration.

The independent claims have been amended to incorporate the fact that the block polymers have suds stabilizing properties as supported at page 4, line 25 of the present specification. For example the preamble of claim 1 was amended to read: "A block polymer suds stabilizer comprising:". Also, all the independent claims now recite an upper limit of cationic charge density of about 5. This level is supported by original claim 6.

I.   Restriction Requirement

Applicants acknowledge the restriction requirement was made final.

II.   35 USC § 102 or 103

Claims 1-19 and 22-24 are rejected under 35 USC § 102(b) as anticipated by or, in the alternative, under 35 USC § 103(a) as obvious over McCall (US Patent 5,277,899) or Li et al (US Patent No. 5,580,819). These rejections are respectfully traversed.

A key difference between the polymers disclosed in McCall and Li et al is that fact that those polymers are described as having the purpose of depositing on a substrate namely, hair and glass, ceramics and metal, respectively.

In particular, McCall discloses at column 12, lines 13-15, that the polymers are hair setting agents defined as any polymer, natural or synthetic, that can provide hair setting benefits.

Li describes a composition for producing durable coatings on solid substrates, such as glass, ceramics, metals, and organic polymeric materials.

McCall and Li both fail to teach that their polymers are capable of generating and/or stablizing suds. The Office action asserts that although the references do not disclose a cationic charge density of 0.15 or less that it would be reasonable to presume this property would present the same characteristic in the compositions of McCall or Li et al. However, applicants reply that, in fact, if McCall and Li used a polymer that

generated and/or stabilized suds, the polymer would likely not perform as desired, if at all. Thus, McCall and Li et al teach away from the types of polymers claimed.

Moreover, pages 41-44 disclose how to calculate cationic charge density in detail. From this disclosure, it is seen that the cationic charge density depends on the ratios of the various monomers as well as the pH of the composition. There is no teaching or suggestion to select such ratios or pH to achieve the presently recited cationic charge density.

In the section Cationic Charge Density of the application at page 41, it is noted that "Polymers have been shown to be effective for delivering sudsing benefits in a hand dishwashing context, provided the polymer contains a cationic moiety, either permanent via a quaternary nitrogen or temporary via protonation."

Accordingly the average cationic charge density element is an important point in the distinction between the polymers of McCall and Li and the presently claimed polymers.
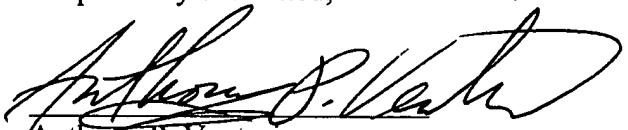
In light of the foregoing, it is respectfully submitted that McCall and Li fail to teach or suggest each and every element of the claims.

III.   Conclusion

In view of the above, it is respectfully submitted that all objections and rejections are overcome. Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

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ATTACHMENT I - Marked up Claims

1.   (Amended) A block polymer <u>suds stabilizer</u> comprising:

iii) one or more cationic group-containing units; and

iv) optionally one or more additional building block units;

provided that the block polymer has an average cationic charge density of about [15] <u>5</u> or less <u>units per 100 daltons molecular weight</u>.

11.   (Amended) A block polymer <u>suds stabilizer</u> comprising at least a first homopolymeric unit comprising a series of first cationic monomeric units and at least a second hompolymeric unit comprising a series of second polymeric units,

at least said first monomeric units capable of having a cationic charge at a pH of from about 4 to about 12;

provided that said polymer has an average cationic charge density from about 0.05 to about 5 units per 100 daltons molecular weight at a pH of from about 4 to about 12.
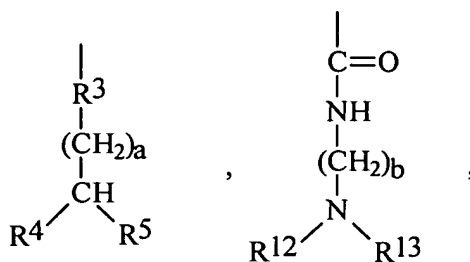
12.   (Amended) A block polymer <u>suds stabilizer</u> comprising at least one homopolymeric block of monomeric units A and at least one member of the group consisting of a homopolymeric block of monomeric units B and a homopolymeric block of monomeric units C <u>provided that said polymer has an average cationic charge density of at most about 5 units per 100 daltons molecular weight at a pH of from about 4 to about 12</u> :

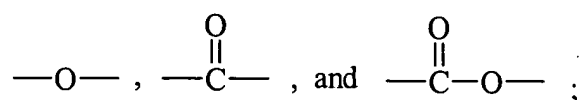A.   said block of cationic monomeric units A having a Formula I:

$$\left(CH_2 - \underset{R^2}{\overset{R^1}{\underset{|}{\overset{|}{C}}}} \right)_{mx} \qquad I$$
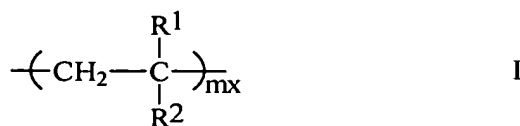
wherein R^1 is H or an alkyl having 1 to 10 carbon atoms,

R^2 is a moiety selected from the group consisting of

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$$\begin{array}{c} | \\ R^3 \\ | \\ (CH_2)_a \\ | \\ CH \\ R^4 \diagup \diagdown R^5 \end{array} \quad , \qquad \begin{array}{c} | \\ C=O \\ | \\ NH \\ | \\ (CH_2)_b \\ | \\ N \\ R^{12} \diagup \diagdown R^{13} \end{array} \quad ,$$

wherein R^3 is selected from the group consisting of

$$-O- \; , \quad \begin{array}{c} O \\ \| \\ -C- \end{array} \; , \text{ and } \quad \begin{array}{c} O \\ \| \\ -C-O- \end{array} \; ;$$

a is an integer from 0 to 16; b is an integer from 2 to 10; c is an integer from 2 to 10; d is an integer from 1 to 100;

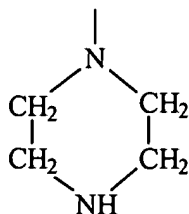R^4 and R^5 are independently selected from the group consisting of -H, and

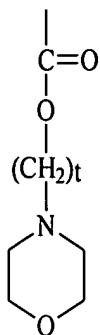$$-R^8-N \diagup \diagdown \begin{array}{c} R^9 \\ \\ R^{10} \end{array} \quad ;$$
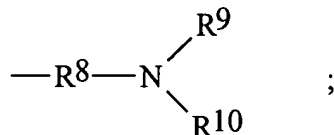
R^8 is independently selected from the group consisting of a bond and an alkylene having 1 to 18 carbon atoms;

R^9 and R^{10} are independently selected from the group consisting of -H, alkyl having 1 to 10 carbon atoms;

R^{12} and R^{13} are independently selected from the group consisting of H and alkyl having from 1 to 10 carbon atoms;

$$\begin{array}{c} | \\ N \\ CH_2 \diagup \diagdown CH_2 \\ | \qquad | \\ CH_2 \qquad CH_2 \\ \diagdown NH \diagup \end{array}$$

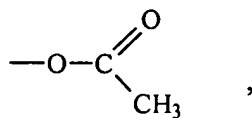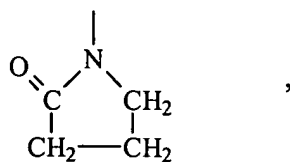$$\begin{array}{c} | \\ C=O \\ | \\ O \\ | \\ (CH_2)t \\ | \\ N \end{array}$$
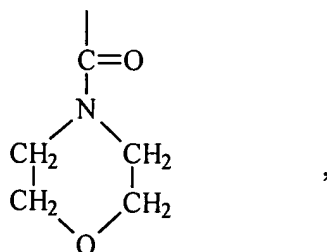
(morpholine ring)

wherein t is an integer from 2 to 10;

B. said monomeric unit B is selected from the group consisting of:
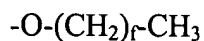
a monomeric unit of Formula IV

$$-\!\!\left(\!CH_2-\overset{\overset{\displaystyle R^{20}}{|}}{\underset{\underset{\displaystyle R^{21}}{|}}{C}}\!\right)_{\!nx} \qquad IV$$
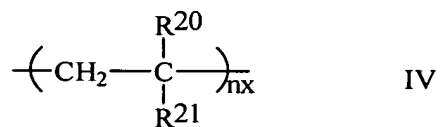
wherein R^{20} is selected from the group consisting of H and CH_3;

R^{21} is selected from the group consisting of:

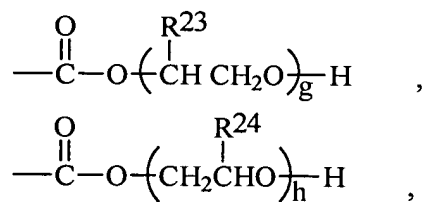$$\begin{array}{c} | \\ C=O \\ | \\ N \\ CH_2 \quad CH_2 \\ | \qquad | \\ CH_2 \quad CH_2 \\ O \end{array} \qquad ,$$

$$\begin{array}{c} | \\ N \\ O=C \quad CH_2 \\ CH_2-CH_2 \end{array} \qquad ,$$

$$-O-C\!\!\begin{array}{c} \diagup\!\!O \\ \diagdown CH_3 \end{array} \qquad ,$$

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$$-\text{OH} \quad ,$$

$$-\text{C}\underset{\text{OH}}{\overset{\overset{\displaystyle O}{\parallel}}{}} \quad ,$$

$$-\underset{\overset{\displaystyle \parallel}{O}}{C}-O-(CH_2)_e-OH \ ,$$
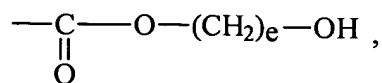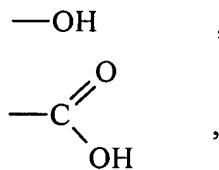
wherein e is an integer from 3 to 25;

$$-O-(CH_2)_f-CH_3$$

wherein f is an integer from 0 to 25;

$$-\overset{\overset{\displaystyle O}{\parallel}}{C}-O\left(\underset{\underset{\displaystyle}{}}{\overset{\displaystyle R^{23}}{CH}}\ CH_2O\right)_g H \quad ,$$

$$-\overset{\overset{\displaystyle O}{\parallel}}{C}-O\left(CH_2\overset{\displaystyle R^{24}}{CHO}\right)_h H \quad ,$$

wherein g is an integer from 1 to 100,

h is an integer from 1 to 100,

R^{23} is -H, -CH$_3$ or -C$_2$H$_5$,

R^{24} is -CH$_3$ or -C$_2$H$_5$;

$$-\overset{\overset{\displaystyle O}{\parallel}}{C}-NH-(CH_2)_j-OH$$
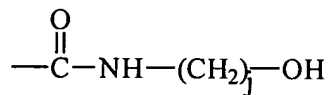
wherein j is an integer from 1 to 25;

$$-\overset{\overset{\displaystyle O}{\parallel}}{C}-NH-CH_2-\overset{\displaystyle CH_3}{CH}-OH \quad ;$$
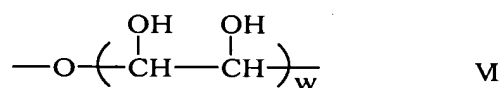
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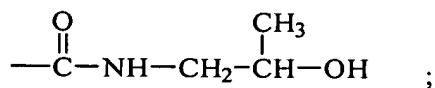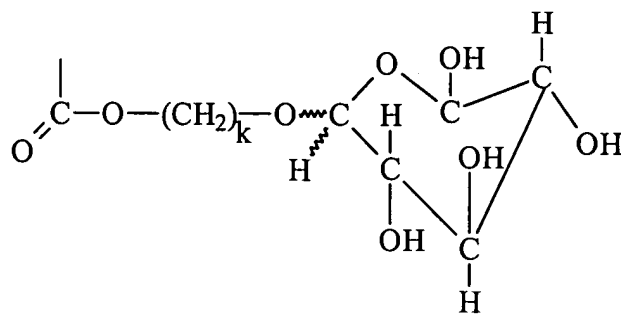
wherein k is an integer from 1 to 25;
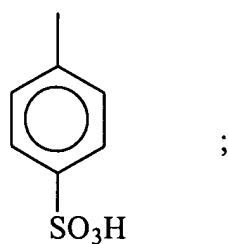
-NH-$(CH_2)_r$-NH$_2\cdot$HCl, wherein r is an integer from 1 to 25; and
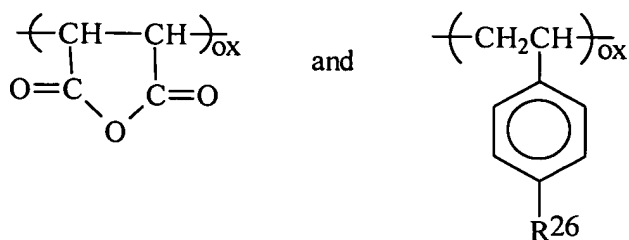
a polyhydroxy monomeric unit of Formula VI:

$$—O-\left(-\underset{\underset{CH}{|}}{\overset{\overset{OH}{|}}{}}—\underset{\underset{CH}{|}}{\overset{\overset{OH}{|}}{}}-\right)_{\overline{w}} \qquad VI$$

wherein w is an integer from 1 to 50; and

C.   monomeric unit C is selected from the group consisting of:

$$—\left(CH_2—\underset{\underset{\underset{\underset{OH}{|}}{C=O}}{|}}{\overset{\overset{R^{25}}{|}}{C}}—\right)_{ox}—$$

wherein R^{25} is -H or -CH$_3$,

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$$\left(\!\!-CH\!-\!CH\!-\!\right)_{\!ox} \quad \text{and} \quad \left(\!\!-CH_2CH\!-\!\right)_{\!ox}$$

$$O\!=\!C \underset{O}{\diagdown} C\!=\!O$$
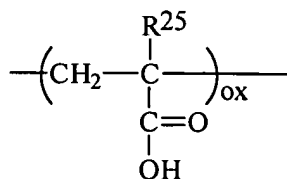
wherein R^{26} is -H or CH_3, and

x represents the total number of monomeric units within the block polymer; m, n, o, when present, represent the mole ratio of their respective monomeric units in a given block polymer, wherein at least two different monomeric units are present in the block polymer.
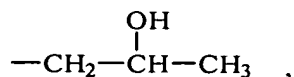
16.   (Amended)   The <u>block</u> polymer of Claim 15, wherein said polymer is a terpolymer,

said at least one monomeric unit B is selected from the group consisting of:

$$\left(\!\!-CH_2\!-\!\underset{\underset{\underset{R^{40}}{|}}{\overset{\overset{R^{38}}{|}}{\underset{\underset{O}{|}}{C}}}\!-\!\right)$$
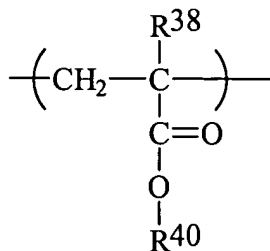
wherein R^{38} is selected from the group consisting of H and CH_3 and

R^{40} is selected from the group consisting of $-CH_2CH_2$-OH and

$$\overset{\overset{OH}{|}}{-CH_2\!-\!CH\!-\!CH_3} \quad ,$$

and isomers thereof,

said terpolymer comprising said at least one monomeric unit C,

wherein the molar ratio of said monomeric unit A : monomeric unit B : monomeric unit C is 1 to 9 : 1 to 9 : 1 to 6 respectively.

19.   (Amended) The <u>block</u> polymer of Claim 18, wherein the molar ratio of monomeric unit A : monomeric unit B : monomeric unit C ranges from 1 to 9 : 1 to 9 : 1 to 3 respectively.